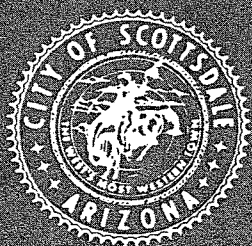
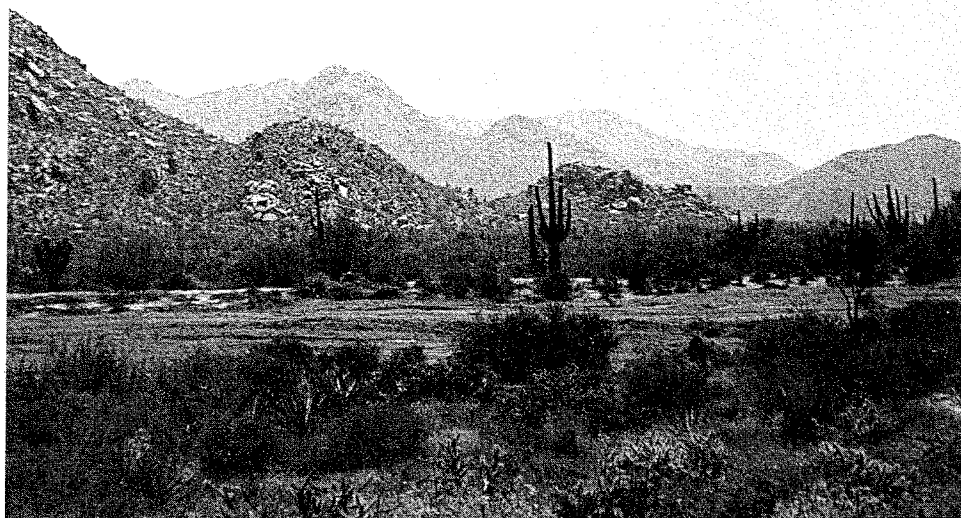


# **NORTH AREA PLAN**

**Background Information**



**Scottsdale, Arizona**  
**September, 1983**



• MOUNTAINS ARE AN  
ENVIRONMENTAL ASSET  
THAT REQUIRE  
PROTECTION

## City Council

**Herbert R. Drinkwater, Mayor**  
**Jean L. Black**  
**James D. Bruner**  
**Diane D. Cusack**  
**Billie Axline Gentry**  
**Jeff Schubert**  
**Charlie Smith**

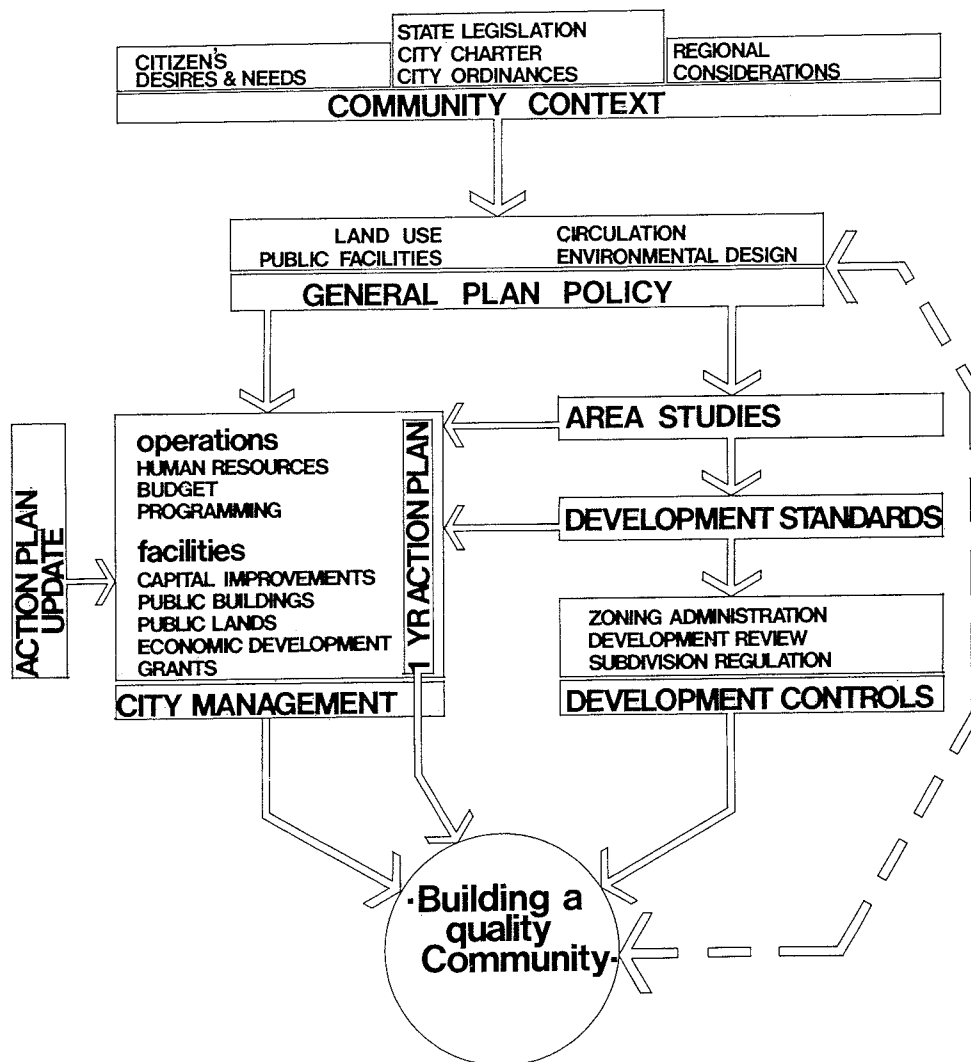
## Planning Commission

**Bill Walton, Chairman**  
**Lynne Bonanno**  
**David Hawkins**  
**George Hoagland**  
**Richard Thomas**  
**Dan Strampe**  
**Dave Wood**

# Introduction



- planning in Scottsdale
- regional context
- study area boundaries
- physical character

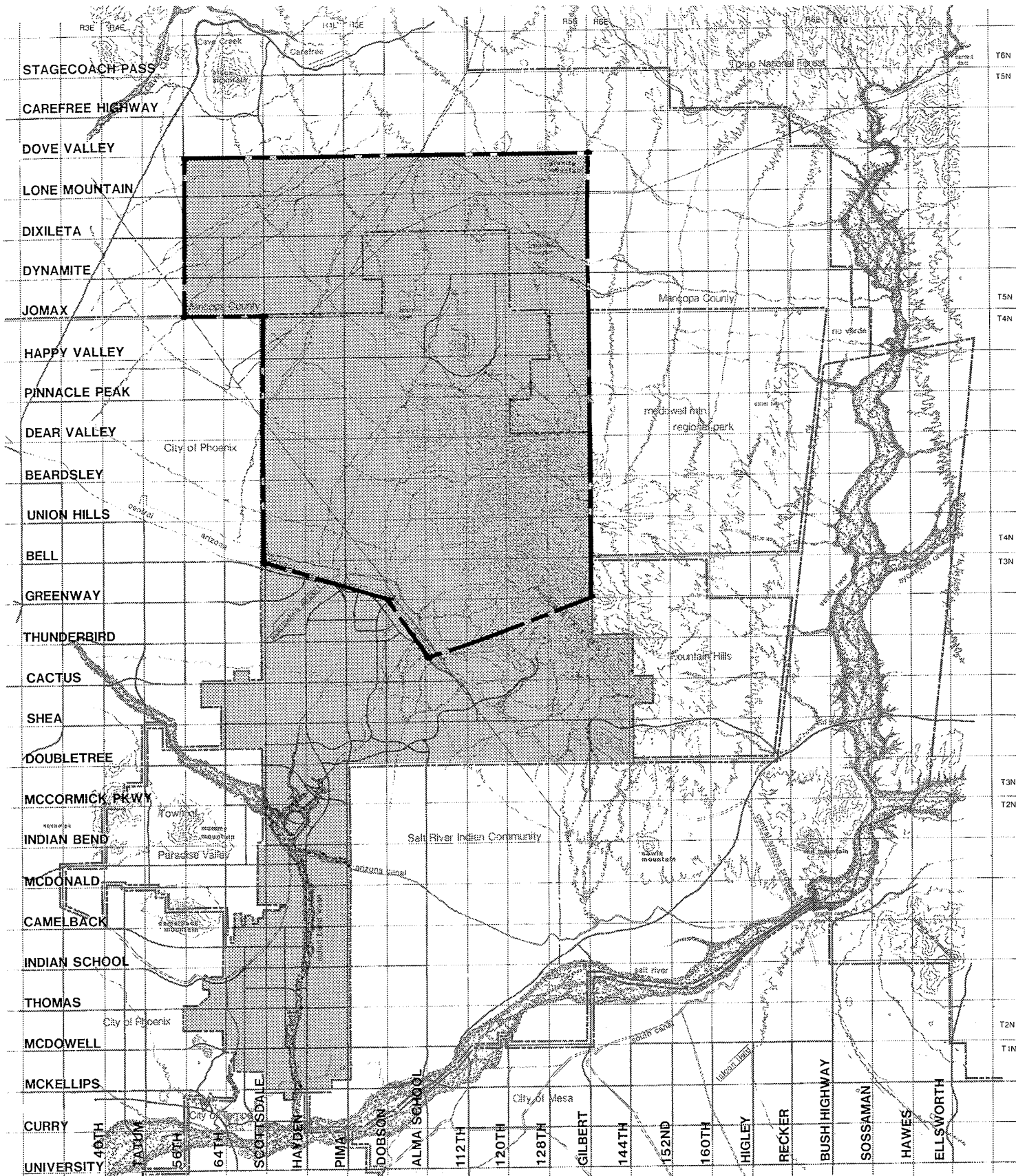


**planning process  
Scottsdale Arizona**

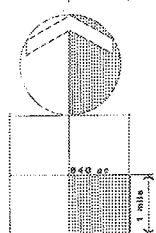
## PLANNING IN SCOTTSDALE



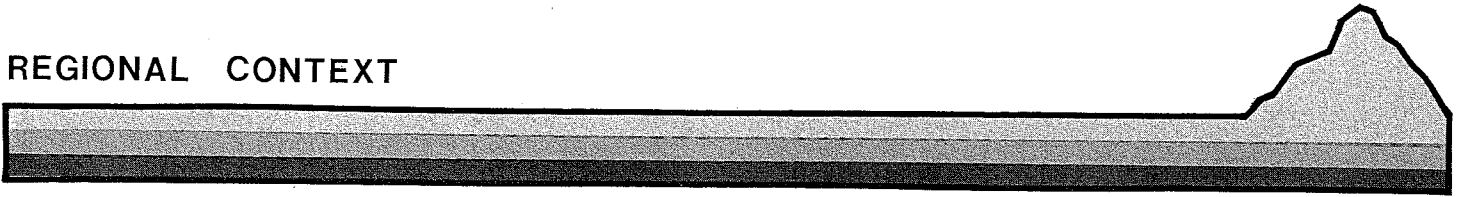
The City of Scottsdale is committed to building a quality community. In the past, the community has effectively managed rapid growth while sustaining quality development. Now with the recent and proposed annexations in the North Area, the city is again faced with planning for future growth. Planning for the North Area will follow a planning process already well established in the City of Scottsdale. The basic guide is the city's General Plan. The plan provides a framework for amending and integrating policy decisions into the community's long range plans. The General Plan is based on the premise that Scottsdale can and should manage development to create a better quality of life.



# REGIONAL CONTEXT

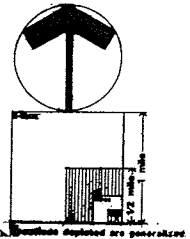
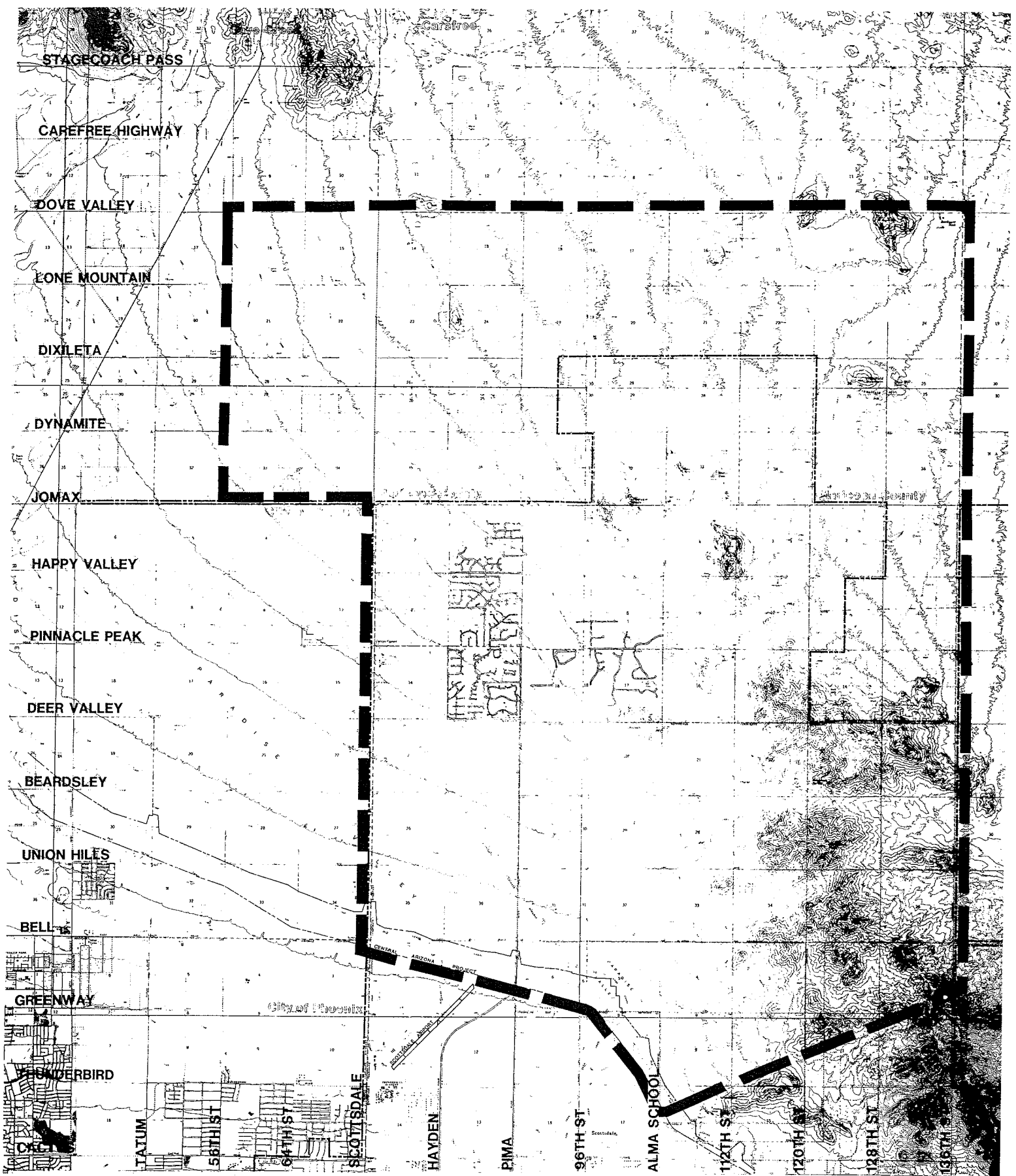


## REGIONAL CONTEXT



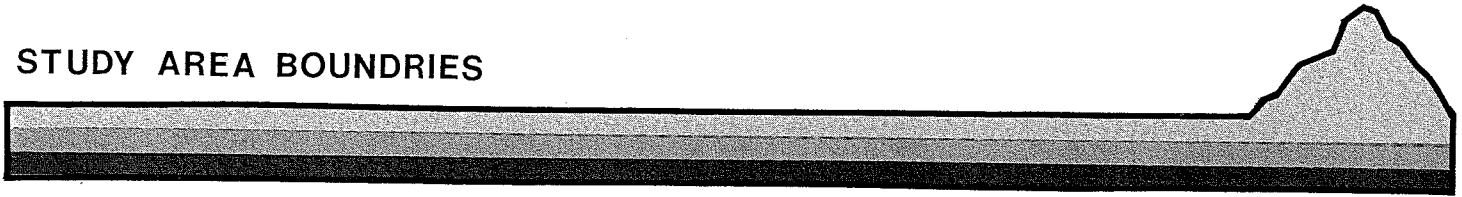
The North Area includes 96 square miles of land in northeast Maricopa County. The center of the study area is about 20 miles north of downtown Scottsdale. The communities of Cave Creek and Carefree are less than five miles to the northwest. The City of Phoenix borders on the west and developed areas of Scottsdale lie to the south. Other important landmarks are the McDowell Mountain Regional Park to the east and the Tonto National Forest to the north and east.





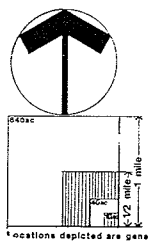
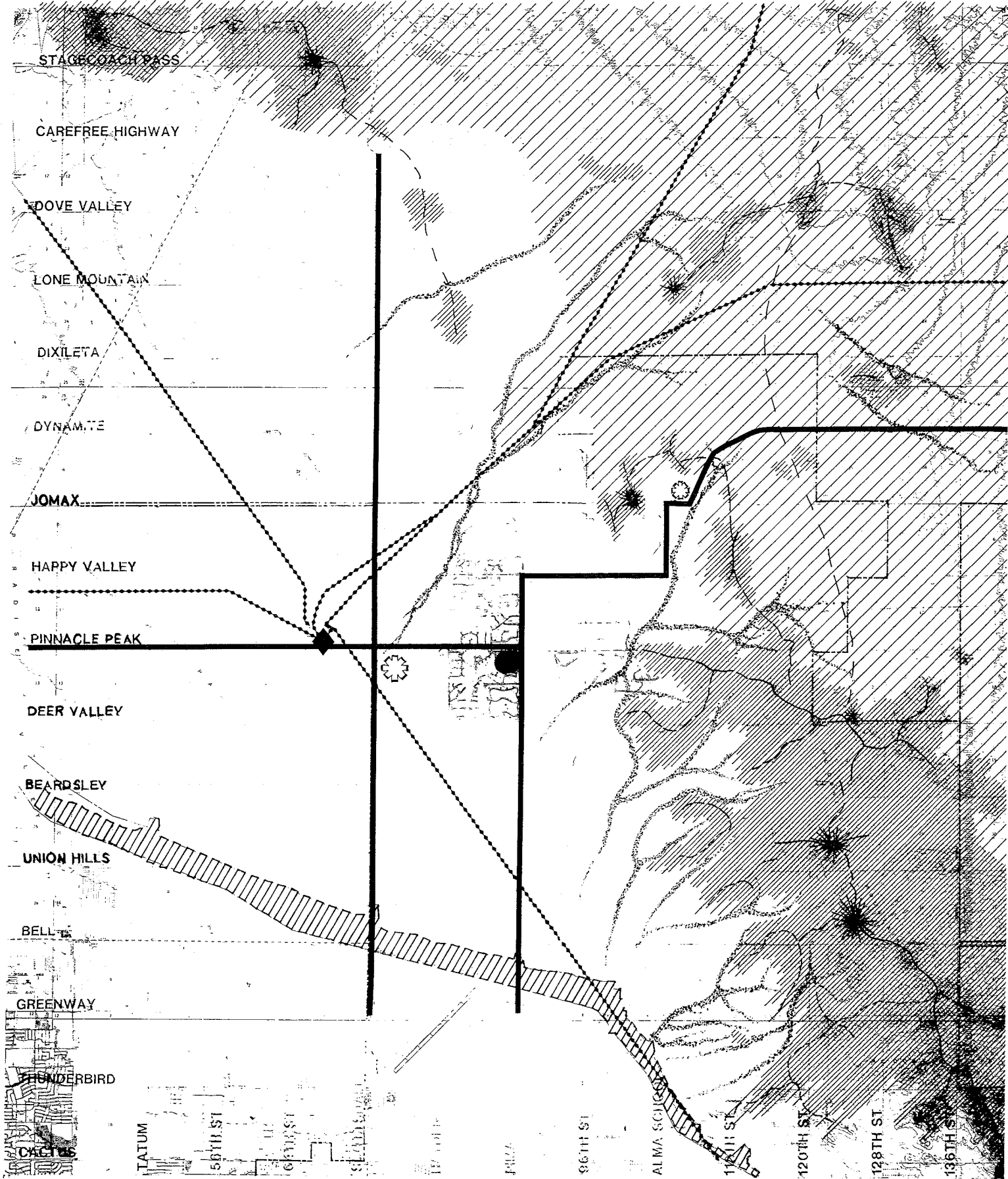


## STUDY AREA BOUNDRIES



For the purposes of this report, the North Area Study boundaries were set to include a 96 square mile area. Fifty-six square miles of this area have been incorporated within the City of Scottsdale, while the balance of the area is likely to be annexed in the future.

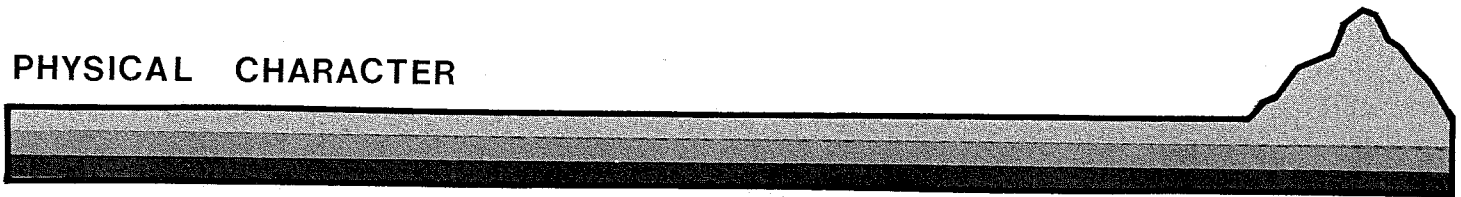
The Dove Valley Road alignment is the study area's northern boundary. The study area is bounded on the east by the 136th Street alignment which is also the western boundary of the McDowell Mountain Regional Park and Fountain Hills. On the south, the Central Arizona Project Aqueduct and the Scottsdale ten year phase line serve as boundaries. To the west, Scottsdale Road generally serves as the study area boundary. However, with the city's acquisition of the Ironwood and North Valley water companies, the area north of the current Phoenix city limits (Jomax Road) west to 56th Street was included as part of the study.



- Transmission Lines
- Substation
- C.A.P. Aqueduct
- Paved Highway
- Western/Tourist Nodes
- Residential Areas/Nodes

- Mountains
- Rough Terrain
- Landmarks
- Major Ridgelines
- Minor Ridgelines
- Major Washes

## PHYSICAL CHARACTER



Area is characterized by rugged terrain and is cut by many large washes. It is higher and wetter than the rest of the city. The vegetation is more luxuriant with giant saguaro cactus and other high desert plants in abundance. The natural desert environment has not been significantly disturbed or irrigated and native plants are dominant.

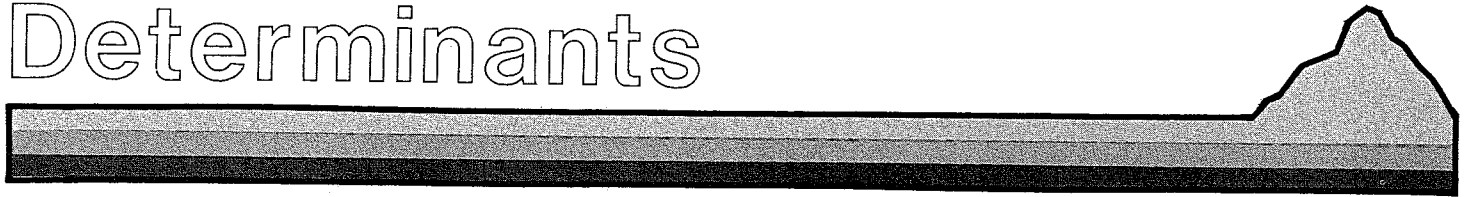
Land ownership patterns are also different in the North Area. The State of Arizona owns one-third of the land in the North Area. Major portions of private land are generally held in large tracts, creating opportunities for planned developments. Some extensive areas of extremely small parcels are also present. Existing development in the area is characterized by scattered clusters of homesites with a few large resort communities under construction. Very little infrastructure (water lines, sewer lines and roads) exists in the study area. Finally, the North Area is isolated from the rest of the city by the CAP canal and its distance from community facilities. Development in the North Area will present a challenge to the city and the development community.

The North Area is very different from the developed portion of Scottsdale. It is twice as large as Scottsdale south of the phase line. The natural environment of the North

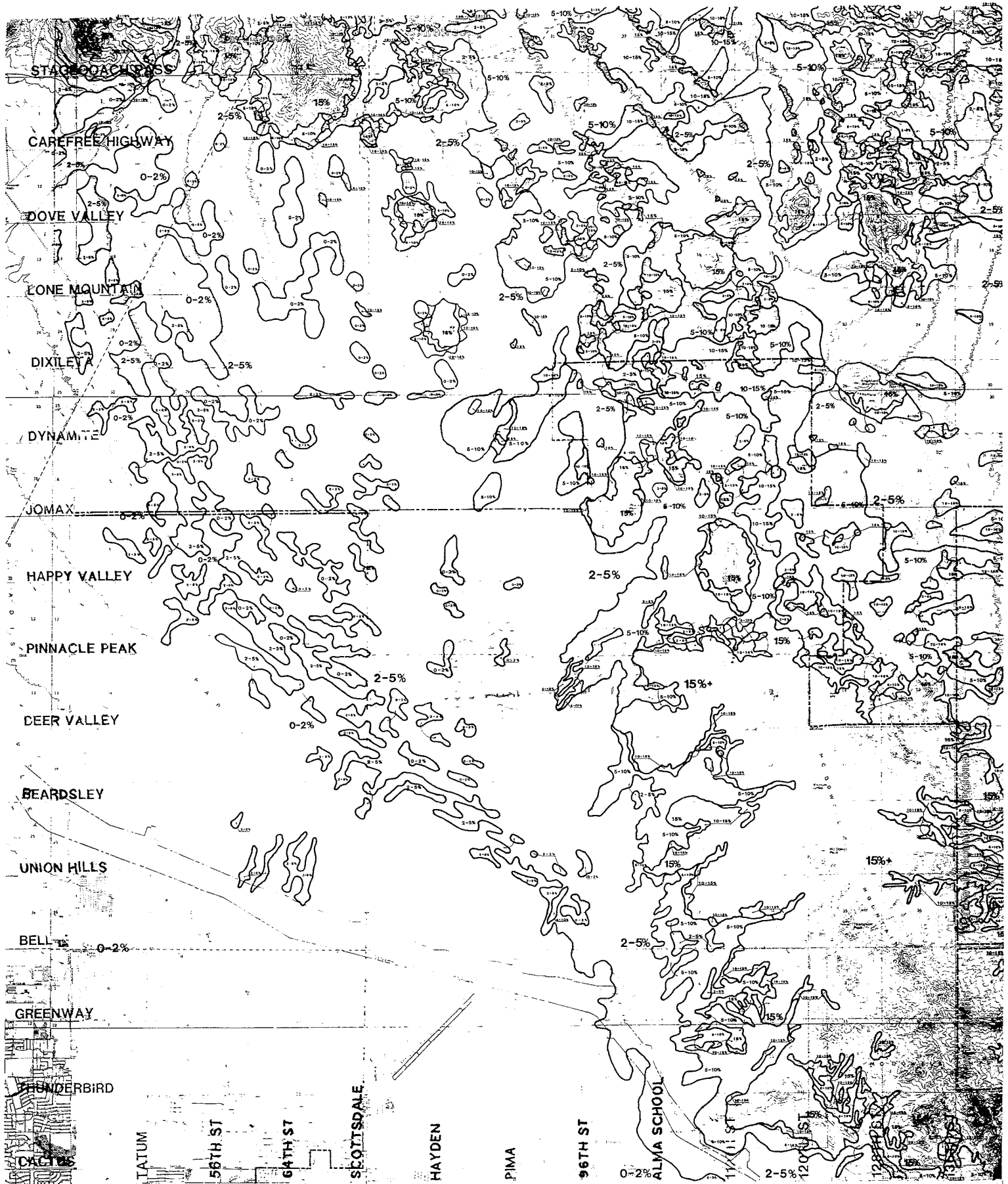
The physical character of the North Area will shape the final plan. The North Area includes a complex set of natural and man-made factors that create unique opportunities and constraints to development. The impact of the mountains and washes will influence the plan, along with the CAP, powerlines, and existing development. These natural and man-made factors will be addressed as part of this background study.



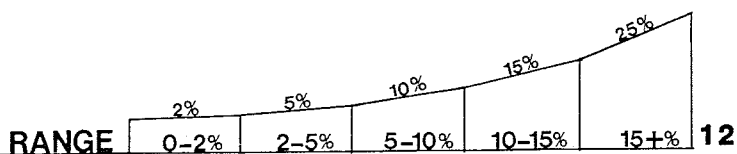
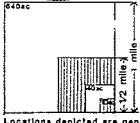
# Physical Determinants



- slopes
- unstable slopes
- soils
- waste disposal suitability
- drainage basins
- flood hazards
- environmental constraints composite

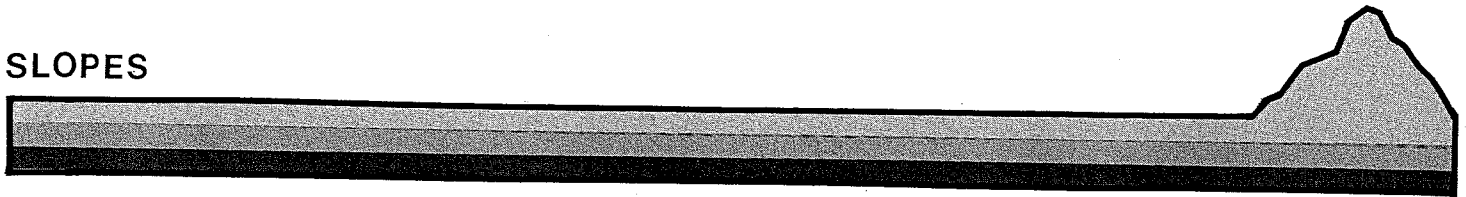


SLOPES



north area study

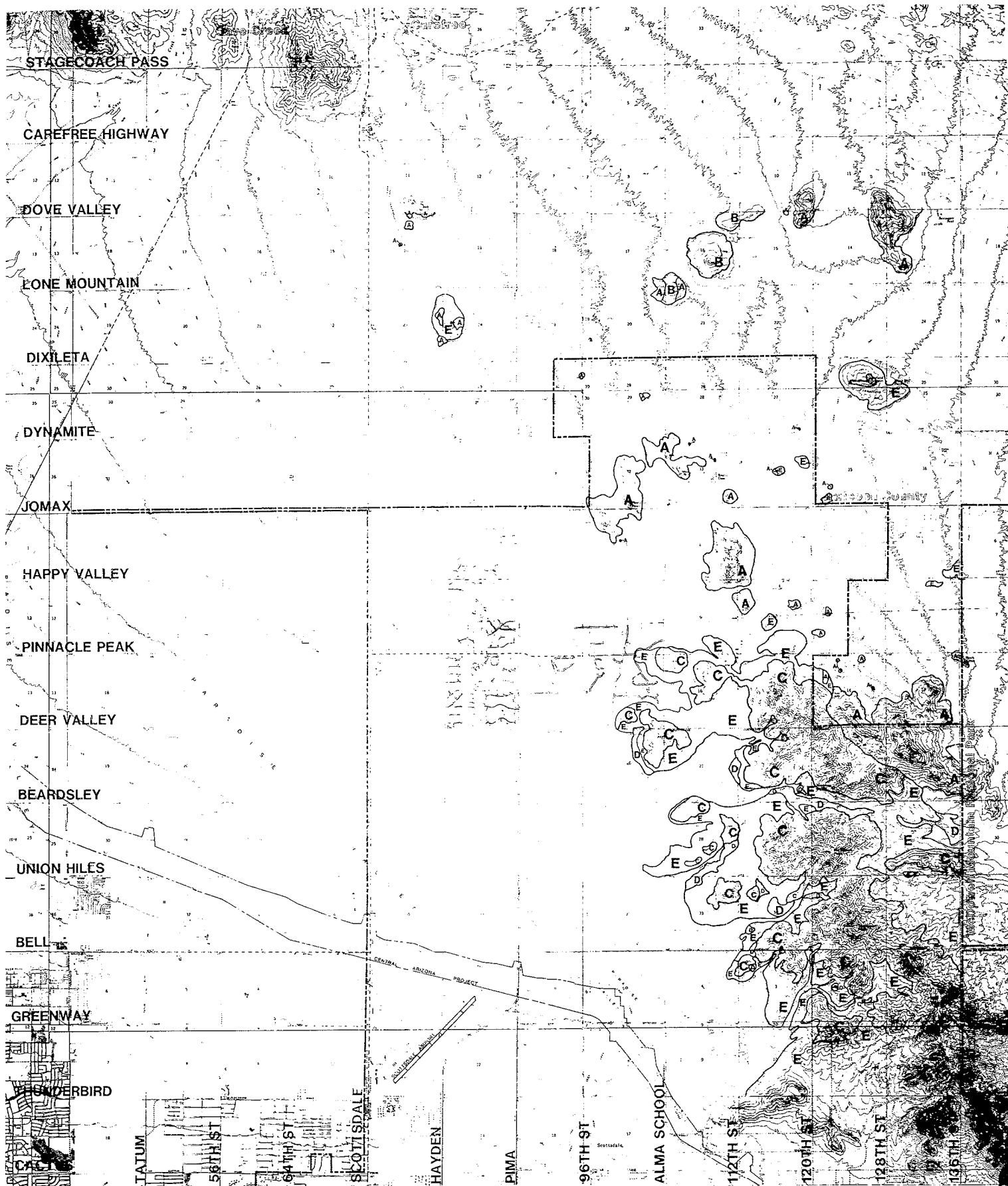
## SLOPES



The North Area contains some of the most rugged topography in Maricopa County. The southeast portion of the study area includes the McDowell Mountains which have many steep slopes well in excess of 15 percent. The northern portion of the study area is characterized by widely scattered steep hills and boulder piles surrounded by rugged undulating terrain. The provision of utilities and services in this rugged area will be difficult and expensive. The southwestern plains are relatively flat and can easily accommodate urban development. Development becomes increasingly more difficult as slopes become steeper than five percent.

Where slopes exceed 15 percent, the City of Scottsdale strictly controls development. In mountainous locations, where slopes exceed 25 percent, the city prohibits development.





- A — GRANITIC BOULDER ROLLING
- B — BASALT/TUFF COLLUVIUM ROLLING
- C — BLOCKY/PLATY METAMORPHIC ROCK FALLS
- D — COLLUVIUM/ALLUVIUM DEBRIS MOVEMENT
- E — WEAK TO MODERATE SLOPE INSTABILITY

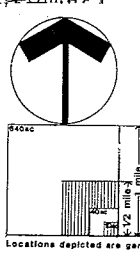
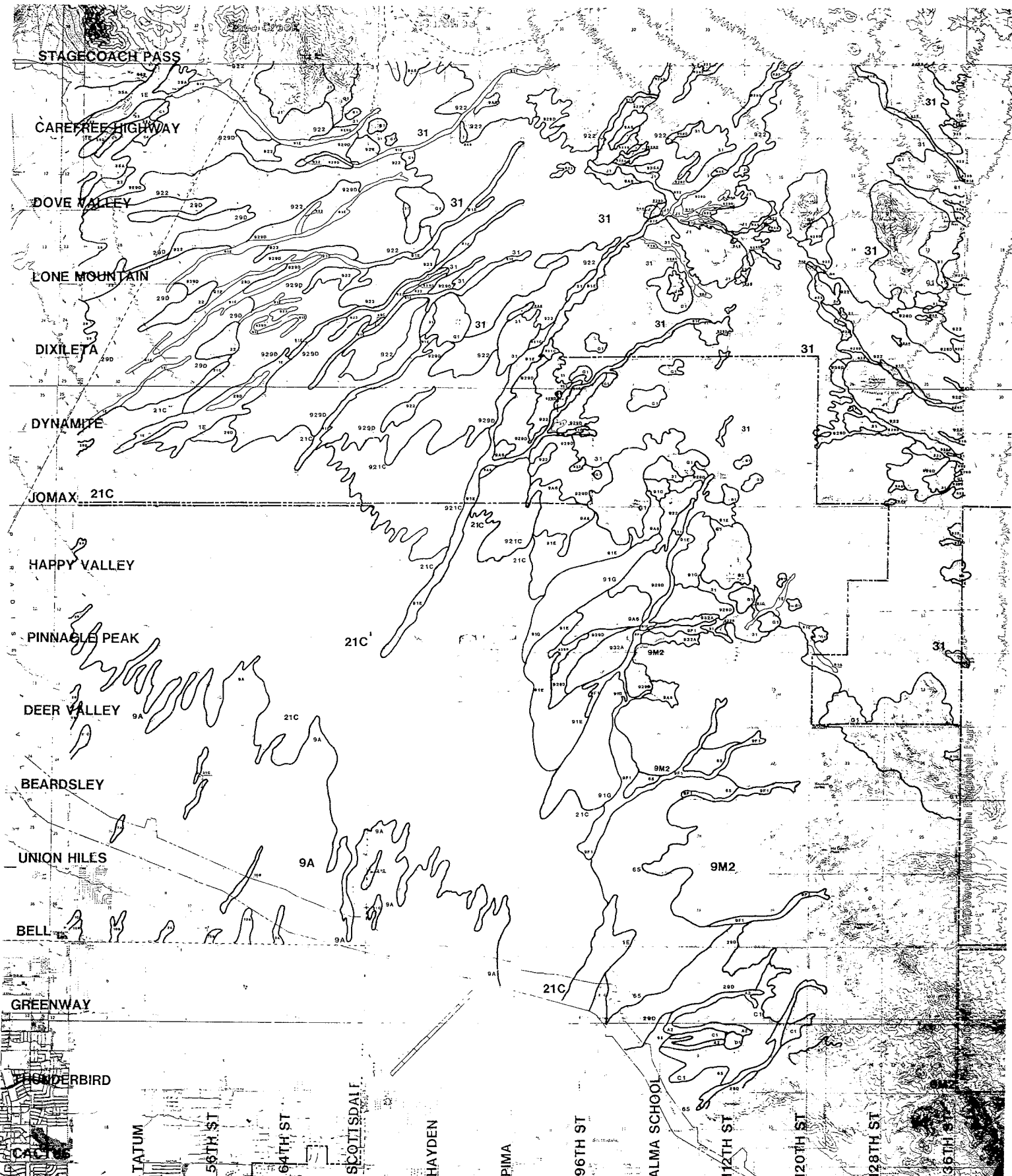
## UNSTABLE SLOPES

SOURCE: PEWE SALES and MONTZ, 1983

## UNSTABLE SLOPES



Unstable slopes are generally concentrated in the McDowell Mountains and other major peaks and are subject to periodic boulder rolling, rockfalls, landslides and other rock movement. Development on unstable slopes is dangerous and expensive, and is generally prohibited under the Hillside Ordinance.



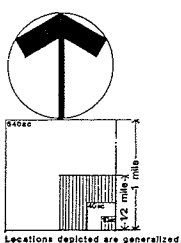
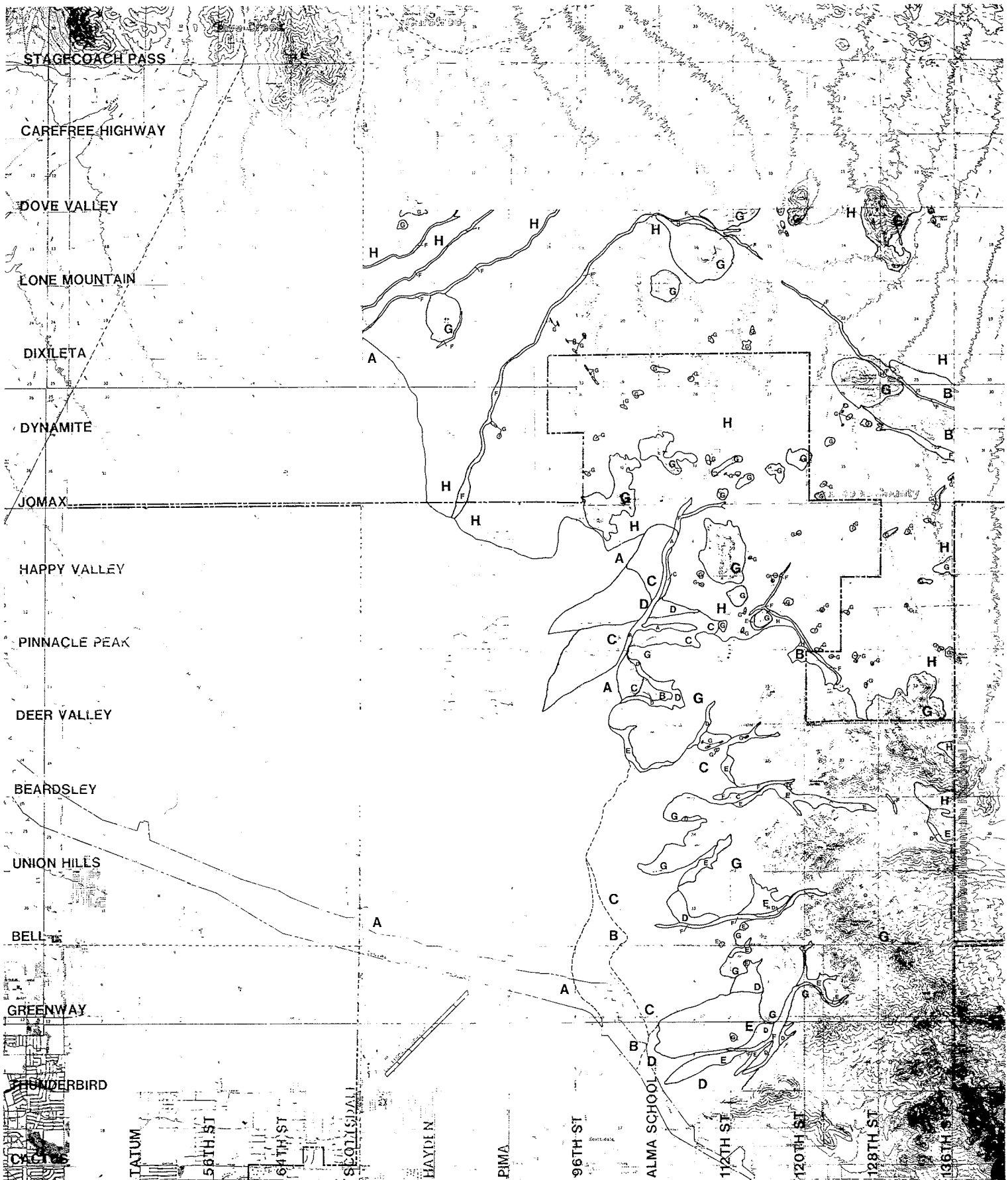
10 ANTHO	29 TREMANT-NILLITO	920B TRES HERMANOS
1E ANTHO-CARRIZO-MARIPO	28D PINAMT-TREMANT	920D PINALENO-TRES HERMANOS
2A GLENBAR	31 GRAN-WICKENBURG, 1-10% SLOPE	932A EBA-PINALENO, 3-20% SLOPE
7A ESTRELLA	35A CAVETREE	932B EBA-PINALENO, 20-40% SLOPE
9A GILMAN	85 MOMOLI-CARRIZO	935A CONTINENTAL
9AB NICKEL-CAVE	91E ANTHONY-ARIZO	A2 GUNSIGHT-CIPRIANO
9F1 ARIZO	910 TRES HERMANOS-ANTHONY	C1 SUNCITY-CIPRIANO
9M2 DIXILETA	99C GILA	D1 GACHADO-LIMITAS
10E GLENBAR	971C YAGD	F1 BRIDS-CARRIZO
21C MOMOLI	922 EBA, 1-8% SLOPE	G1 GRAN-WICKENBURG, 10-65% SLOPE
22 EBON	922B EBA, 8-20% SLOPE	J1 LEHWANS

# SOIL TYPES

## SOILS



Soils serve as the platform for development. Three broad soil types blanket the North Area: very thin soils in the steep rocky mountains, outwash soils adjacent to the mountains, and deep, well-drained soils on the plains immediately north of the CAP. Adjacent to the mountains, hard, rock-like caliche commonly occurs. This feature presents many of the same construction problems that are found in bedrock areas. The North Area soils present few shrink-swell problems. Thin soils and outwash soils also present waste disposal and drainage problems, while deep, well-drained soils to the southwest most easily support urban development.



SUITABILITY FOR: SEPTIC TANK

A	GOOD
B	GOOD-FAIR
C	GOOD-FAIR
D	FAIR-POOR
E	POOR
F	FAIR-POOR
G	POOR
H	FAIR-POOR

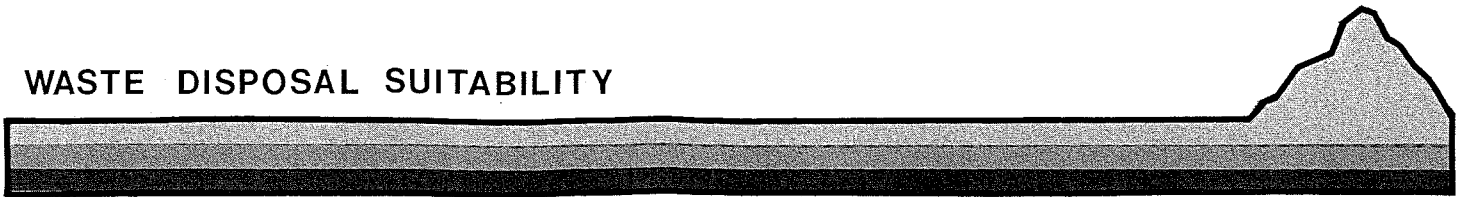
WASTE POND

A	POOR
B	POOR
C	POOR
D	FAIR
E	POOR
F	POOR
G	POOR
H	FAIR-POOR

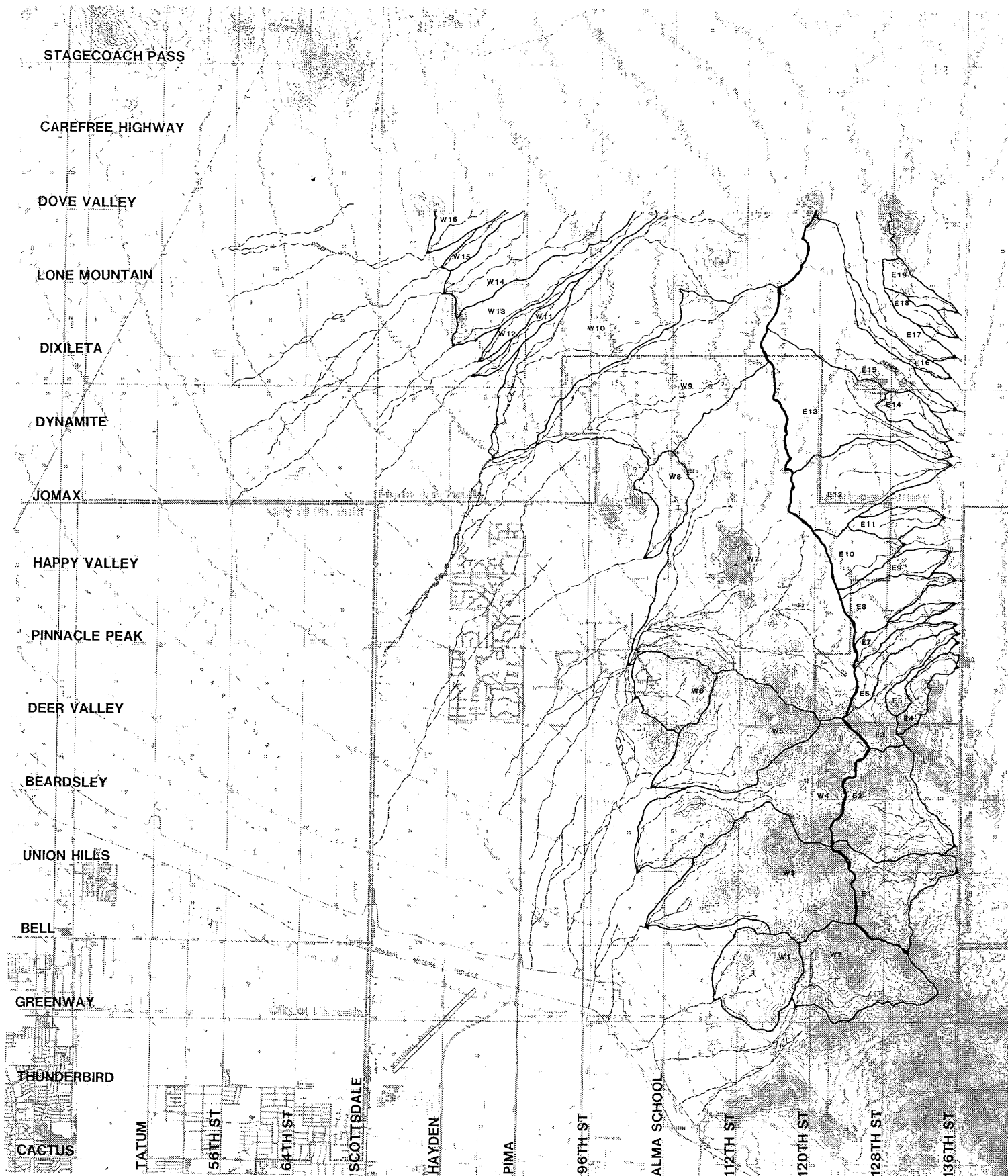
WASTE DISPOSAL SUITABILITY

SOURCE: PEWE BALES and MONTZ, 1983

## WASTE DISPOSAL SUITABILITY



Some areas are more suitable for on-site or septic wastewater disposal systems than others. The deep soils in the flat plains can easily accommodate septic systems. The soils on outwash slopes present some limitations and the rock slopes are very poor for septic systems. In the northern portion of the study area, thin soils underlaid by bedrock and caliche are poorly suited for septic systems. In poorly suited areas the Maricopa County Health Department suggests that septic systems only be used on lots greater than two acres. Dense urban development on small lots should be served by wastewater treatment plants.



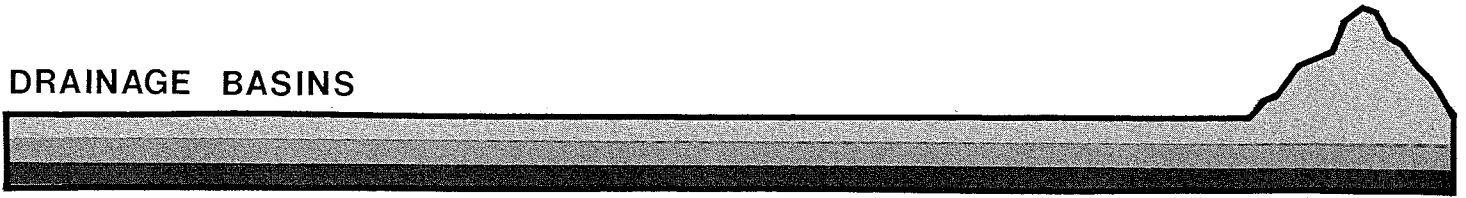
W 1	DRAINAGE BASIN
E 1	SUB-BASIN
▶	DESIGN POINT
•	SUB-BASIN DESIGN POINT
---	MAJOR WASH

## DRAINAGE BASINS

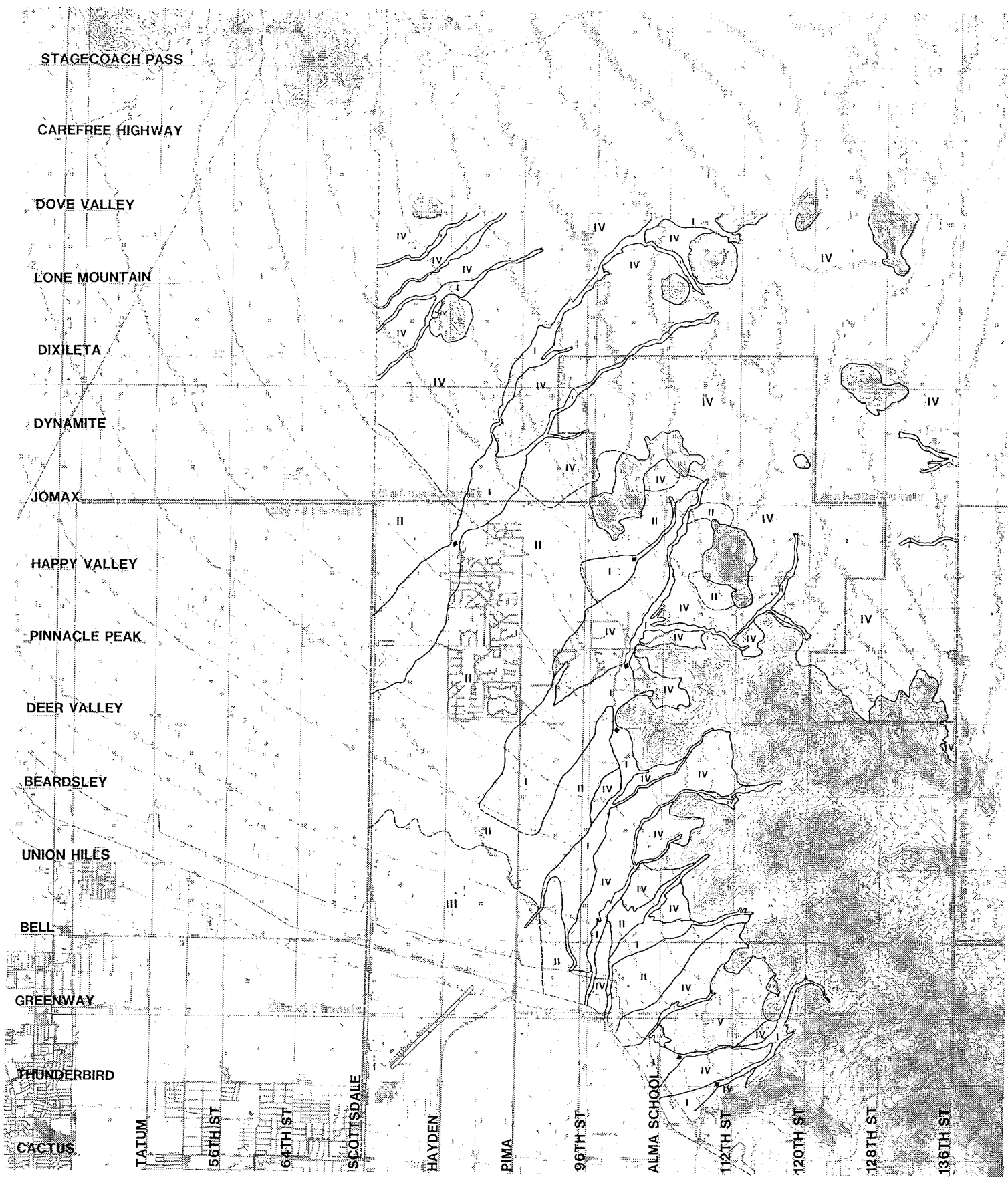
SOURCE: RHOADS and GRAF. 1983



## DRAINAGE BASINS



The North Area is divided into two major drainage basins. The Verde River basin drains a relatively small area on the eastern slopes of the McDowell Mountains. The remainder of the area drains southwest as part of the Paradise Valley basin. Each of the major basins is divided into smaller basins and individual washes. The largest basins occur along the northwestern and western slopes of the McDowell Mountains. There are no year-round streams in the study area, but the desert washes sometimes flow heavily after major rains. The new Arizona Groundwater Management Act restricts the transportation of groundwater between major basins.



HAZARD ZONE	FLOOD POTENTIAL
I	HIGH
II	MODERATE TO HIGH
III	MODERATE TO HIGH
IV	MODERATE
V	LOW

♦ INTERSECTION POINT

# FLOOD HAZARDS

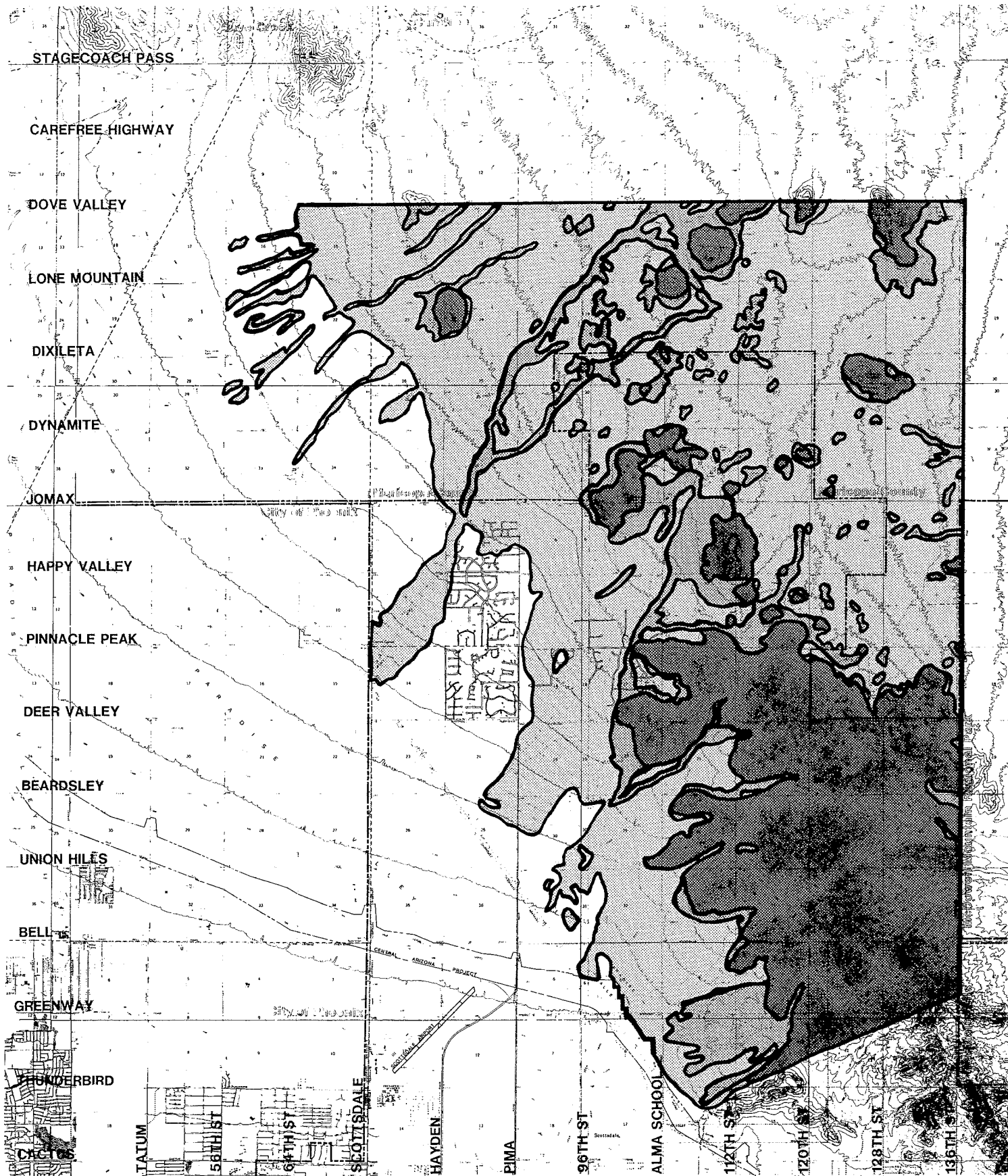
SOURCE: RHOADS and GRAF. 1983

## FLOOD HAZARDS

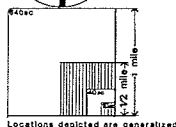
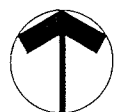


Despite limited rainfall, portions of the North Area are subject to periodic flooding. After periods of intense rainfall, washes originating in the McDowell Mountains and adjacent desert may flood the surrounding land. Areas further from the mountains are subject to shallow floods over larger areas as water overflows the banks of smaller channels.

South of the CAP, flood hazards are not significant due to the CAP dike. North of the CAP, flooding hazards are significant. Although intense storms in the North Area can cause major natural flooding, careless tampering with the natural drainage system can greatly aggravate flooding problems. Considerable care will be required to safely locate development away from washes and flood prone land in the North Area.



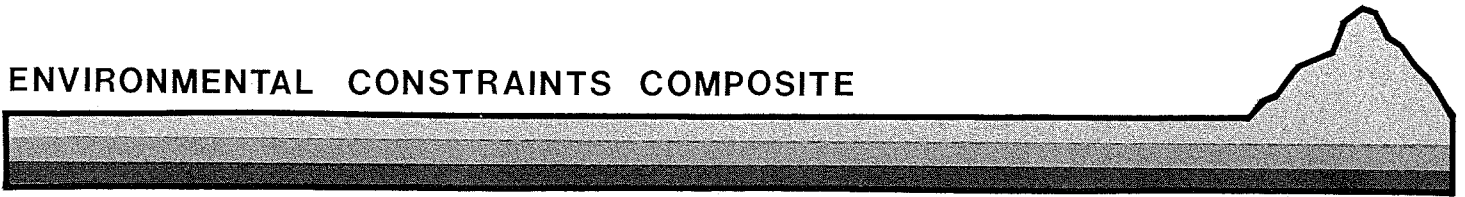
ENVIRONMENTAL CONSTRAINTS COMPOSITE



Locations depicted are generalized



## ENVIRONMENTAL CONSTRAINTS COMPOSITE



The environmental constraints composite map illustrates the cumulative impact of various physical determinants in the North Area. Slopes, unstable slopes, waste disposal suitability, soils, drainage basins, and flood hazards are all considered in determining the level of environmental constraints on future development. The most severe constraints are found on the McDowell Mountains and related peaks. Many environmental constraints converge in this area to create an environment unsuited to development. Major constraints are found near the mountains and in major washes. These areas are extremely sensitive and could be developed only with dire environmental consequences. Areas with significant environmental constraints can be developed at low densities if care is taken to integrate development with the natural environment. Areas with few environmental constraints can be developed at moderate to intense densities if the environmental constraints are recognized.

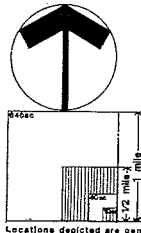
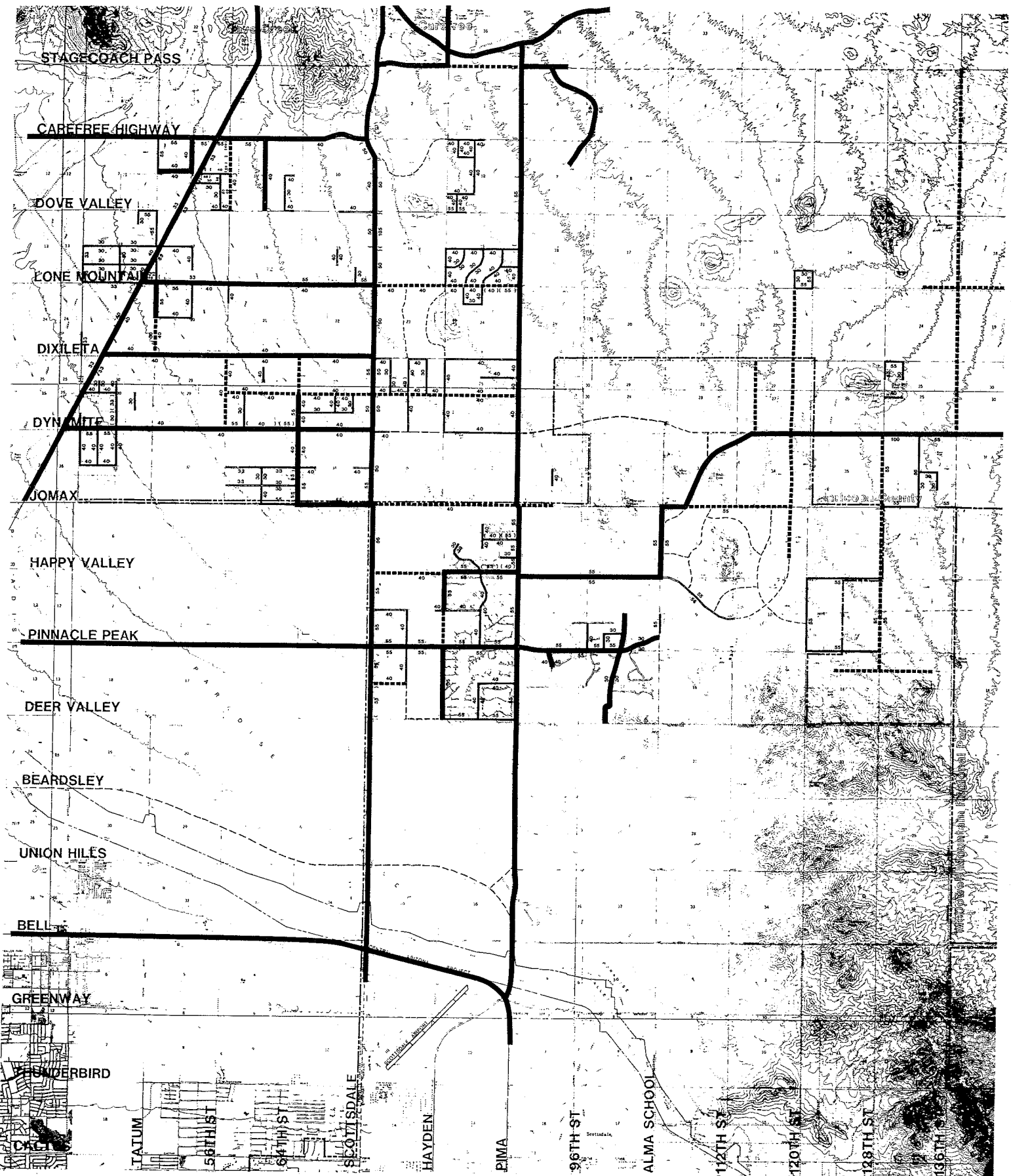


# Infrastructure



- circulation
- water service systems
- sewer service systems
- CIP projects





- PAVED ROADS
- UNPAVED ROADS
- RIGHT OF WAY FOR FUTURE ROADS
- PLANNED ROADS
- RIGHT OF WAY FROM CENTERLINE TO ONE SIDE OF ROAD

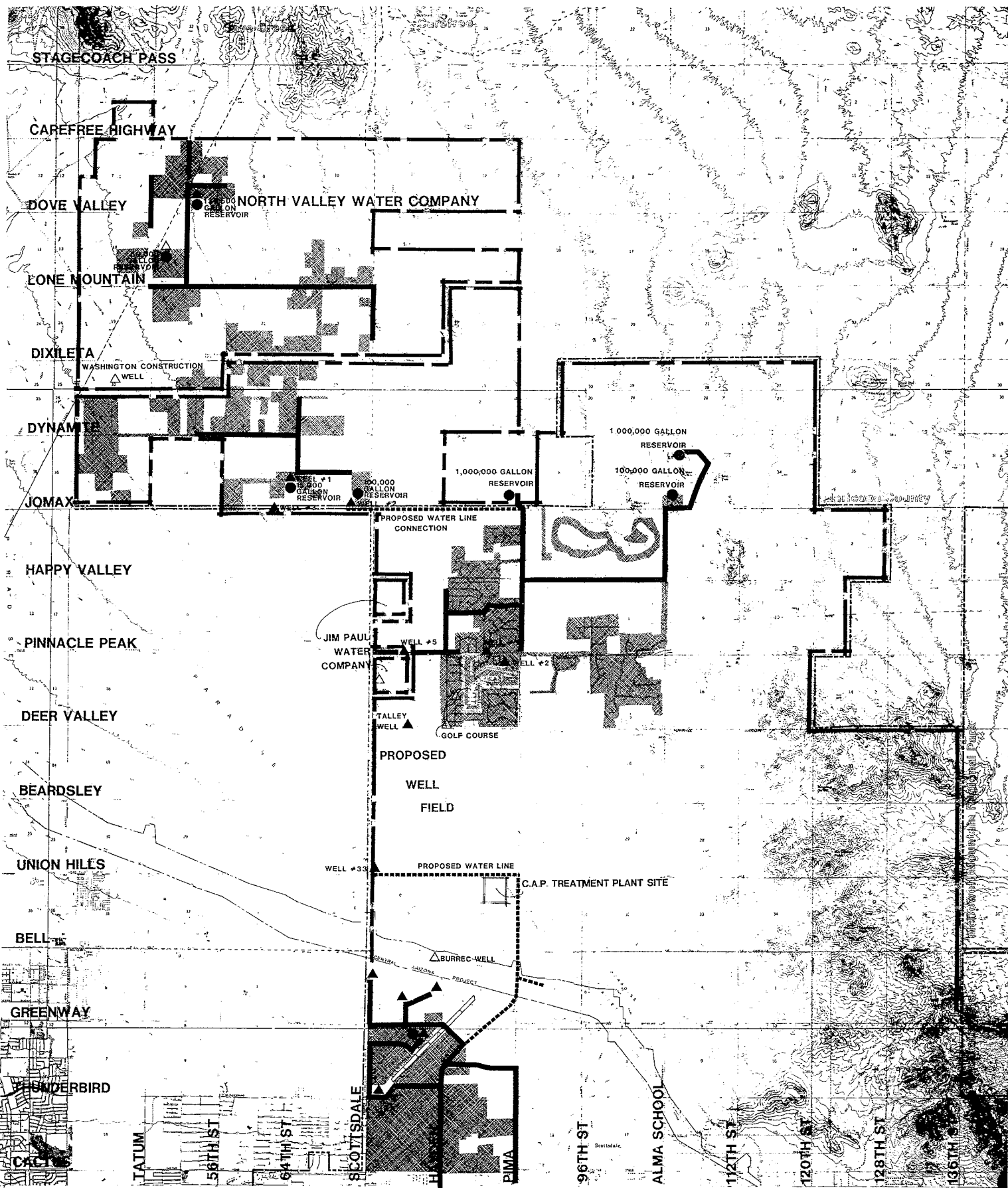
## CIRCULATION

## CIRCULATION

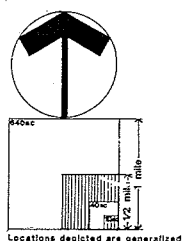


The North Area is currently served by major roads and available right-of-way. Scottsdale, Pima and Cave Creek Roads serve as the major north-south connections. Important east-west links are Pinnacle Peak, Happy Valley, Rio Verde, Dynamite, Lone Mountain and Carefree Highway. While other roads are under construction, there are barriers to building a complete road system in the area. Maricopa County has acquired only certain segments of the needed right-of-way and some existing right-of-way cannot be used due to the steep terrain. In addition, a system of well-used trails has evolved to serve some isolated homesites. Considerable work will be required to assure that each property owner has legal access to his land.

In the future, the Outer Loop Expressway will cross the southern portion of the study area just north of the CAP at about Union Hills. This will have a major impact linking the North Area to the rest of the region. Other links to the surrounding region will be relatively limited due to the cost of constructing bridges over the CAP.

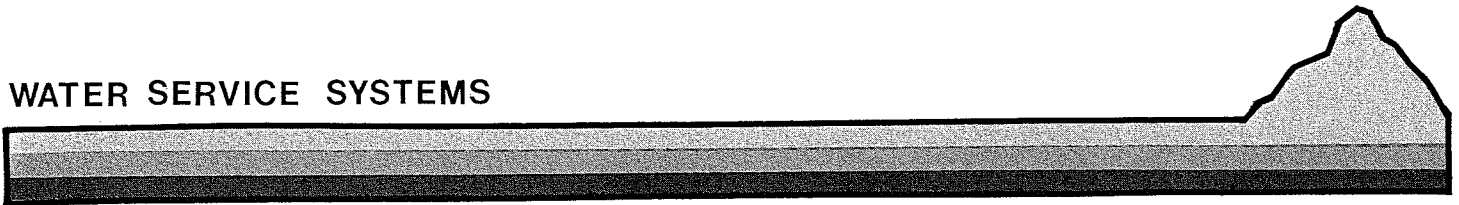


## WATER SERVICE SYSTEMS



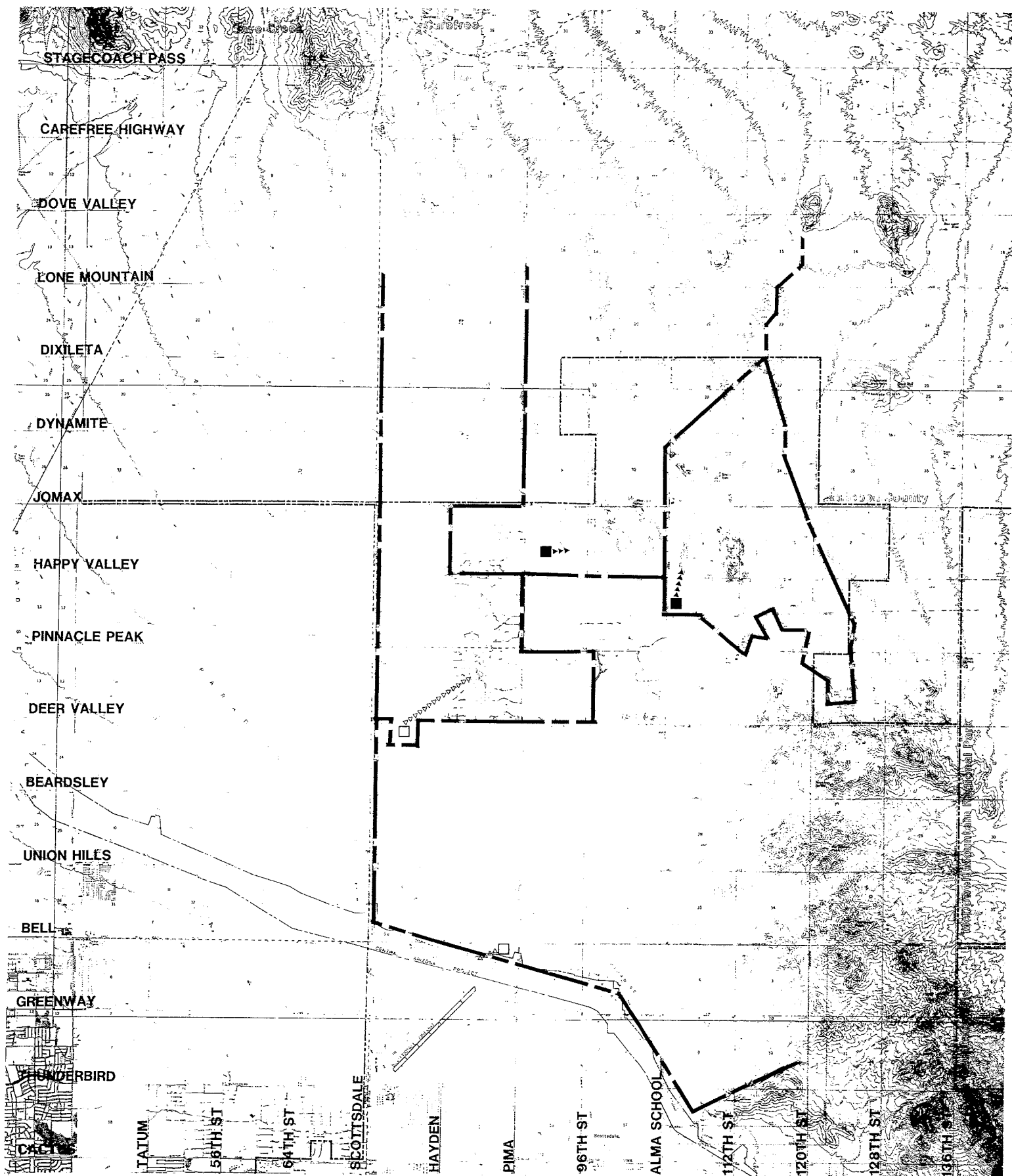
- MAJOR TRUNK LINES
- WELLS
- RESERVOIRS
- CURRENT DISTRIBUTION AREAS
- SERVICE AREA BOUNDARIES

## WATER SERVICE SYSTEMS



Water is a scarce resource in Arizona. Accordingly, water service in the North Area will be subject to a number of natural, legal and technical constraints. The present water supply for the North Area is groundwater and well levels are generally declining. The State Groundwater Law and CAP contracts will soon reduce pumping. CAP water, available in late 1985, will serve most of the area's future water needs.

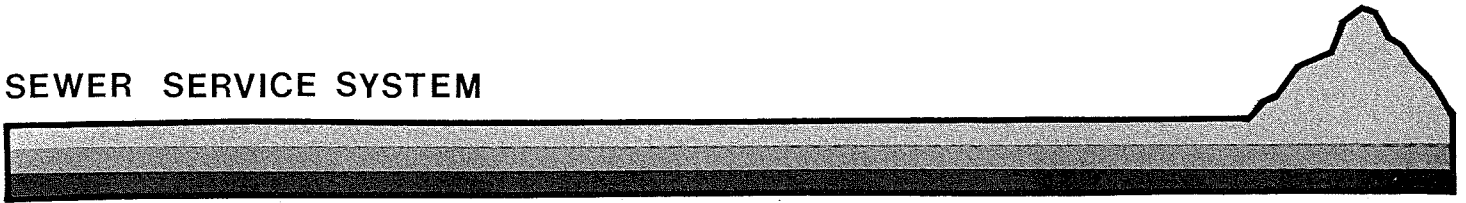
An interconnected water supply does not currently serve the North Area. Two water service systems were recently acquired by the city, but they cover only a small portion of the North Area. Furthermore, within each service system, water pumping, storage and distribution facilities are small and clustered. This makes expansion of the existing systems difficult and expensive. In the future, water conservation and system improvements will guide North Area development.



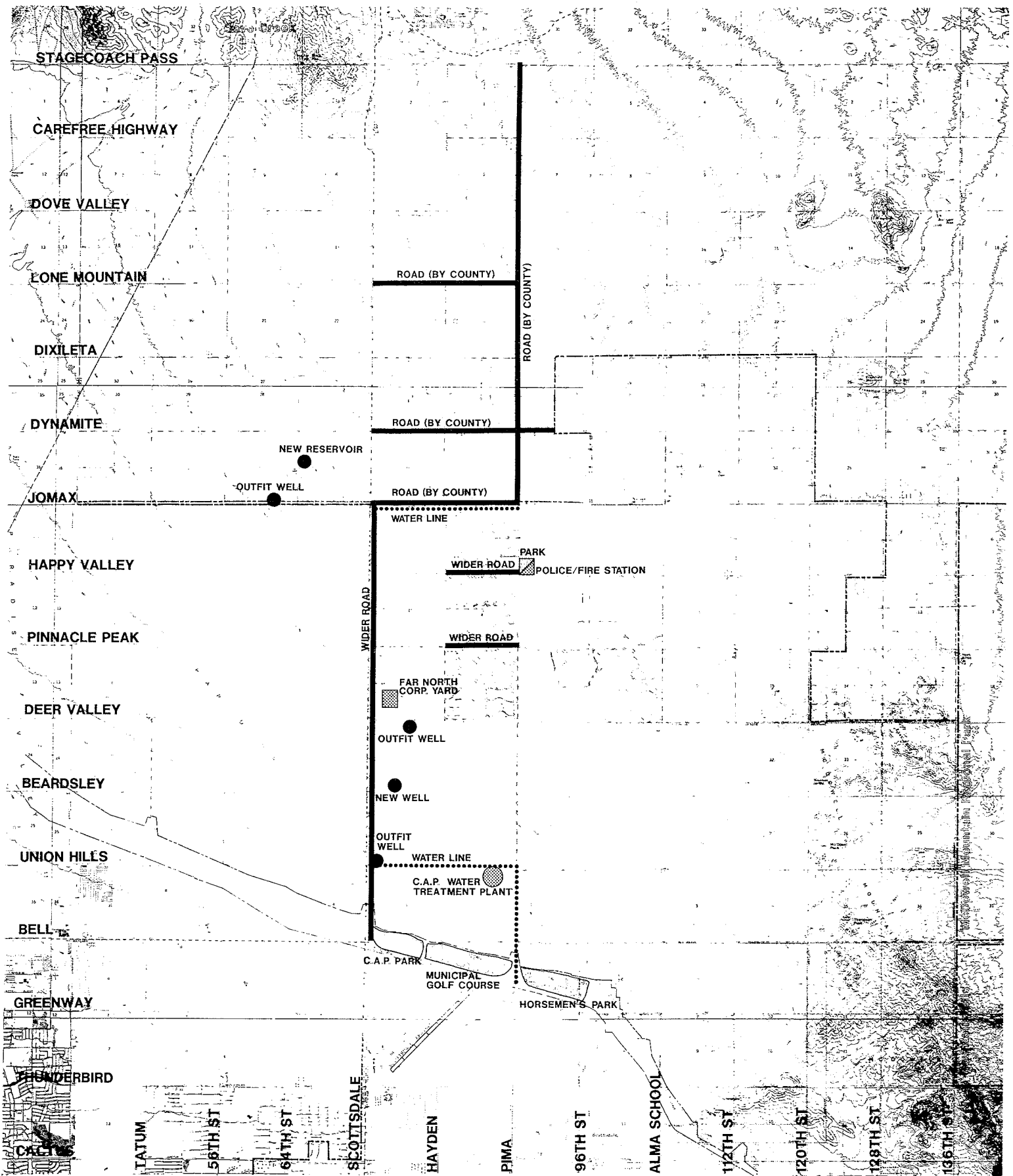
## SEWER SERVICE SYSTEMS

- SERVICE AREA BOUNDARY
- COMMITTED TREATMENT PLANT
- PROPOSED TREATMENT PLANT
- > DISTRIBUTION LINES
- > REUSE SITES  
(GOLF COURSES AND PARKS)

## SEWER SERVICE SYSTEM



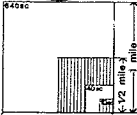
At present there is no sewer service in the North Area. Nevertheless, a few small freestanding treatment plants are under construction in the Pinnacle Peak area. It is anticipated that local sewer and wastewater treatment systems will expand to serve the clustered golf course projects and resorts planned for the area. In the future the recycling of treated wastewater for golf courses and irrigated landscaping will become necessary as the traditional water sources become more scarce.



## C.I.P.\* PROJECTS

\* CAPITAL IMPROVEMENT PROGRAM

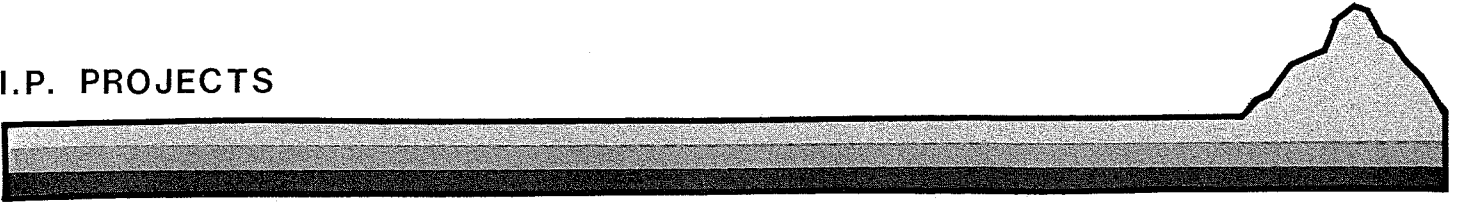
4/83



Locations depicted are generalized.



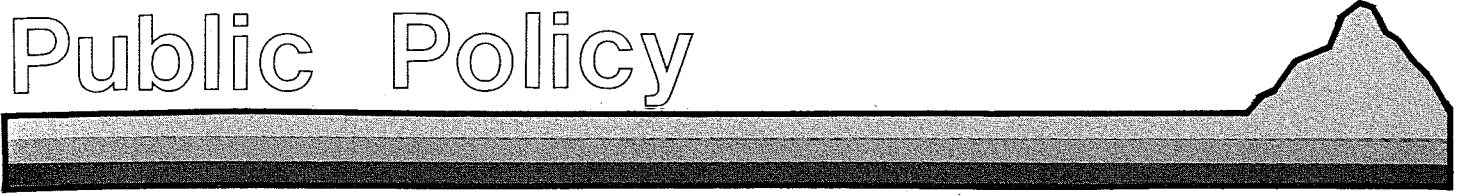
## C.I.P. PROJECTS



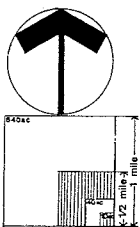
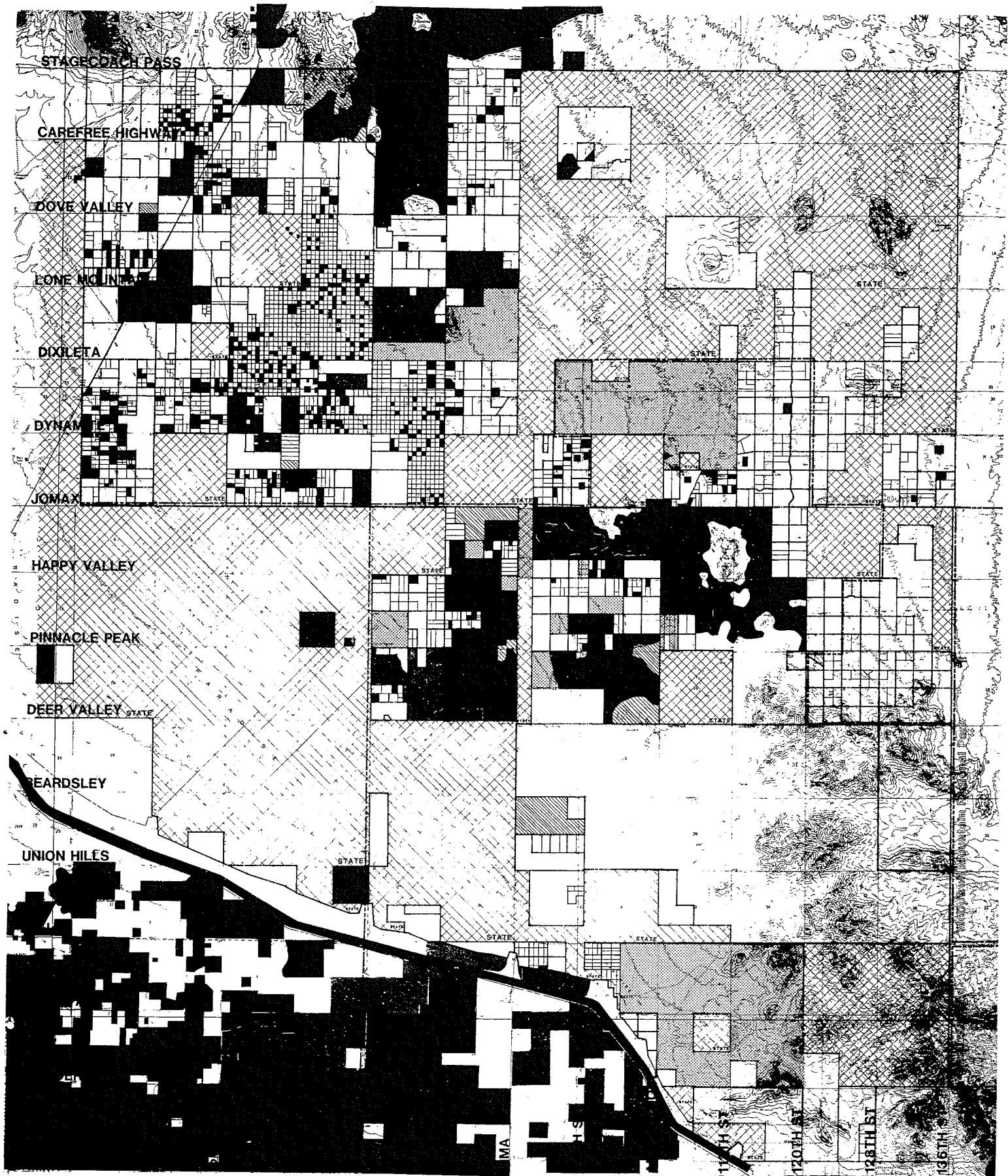
The City of Scottsdale has proposed a ten year Capital Improvement Program for the North Area. This program will guide major improvements to the existing water and street system. Most of the improvements are extensions of existing facilities rather than totally new construction. As the area develops, new projects may be needed. Also, the CIP calls for a new recreation complex immediately north of the CAP. This facility is planned to include a major park, municipal golf course and a special facility for horsemen.



# Public Policy



- development status
- land use policy
- density transfer potential
- state lands



- DEVELOPED
- DEVELOPMENT BEING PROCESSED
- DEVELOPMENT INTEREST

DEVELOPMENT STATUS

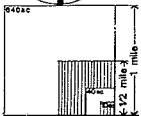
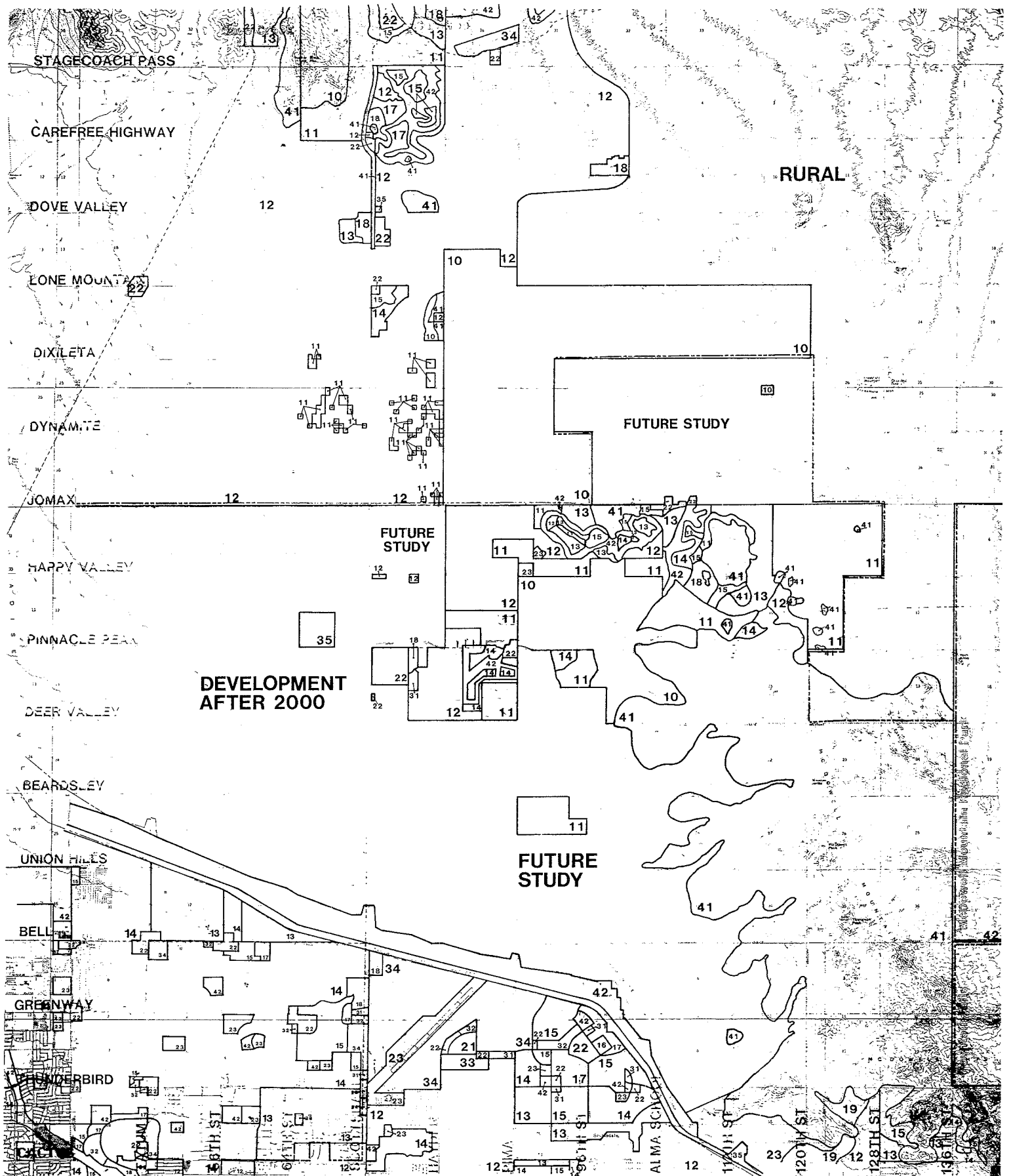
## DEVELOPMENT STATUS



The Central Arizona Project serves as the boundary between the more developed portion of Scottsdale and the largely vacant North Area. The area south of the CAP is either developed or substantially committed to new construction. On the other hand, the North Area contains only scattered development in the central and northwest sections. There is almost no development between the CAP and the central portion near Pinnacle Peak.

The present development pattern reflects the differing development policies of Maricopa County and the City of Scottsdale prior to the recent annexation. Zoning in Maricopa County traditionally has favored scattered one acre homesites and large planned developments. Scottsdale has favored compact contiguous development regardless of its size.

In the near future, Scottsdale may be annexing additional land in the North Area. This may include large areas on two and one-half and five acre parcels subdivided by the Government Land Office and several large master planned developments in unincorporated Maricopa County. The provision of access and public services will be difficult in some of these areas.



10	1/5 D.U./AC	21	SUPPORT COMMERCIAL
11	1/2 D.U./AC	22	GENERAL COMMERCIAL
12	1 D.U./AC	23	CULTURAL/INSTITUTIONAL
13	1-2 D.U./AC	31	MINOR OFFICE
14	2-4 D.U./AC	32	MAJOR OFFICE
15	4-8 D.U./AC	33	LIGHT INDUSTRIAL
16	8-12 D.U./AC	34	GENERAL INDUSTRIAL
17	12-22 D.U./AC	35	UTILITIES
18	TOURIST ACCOMODATIONS	41	CONSERVATION AREAS
19	LOW INTENSITY RECREATION	42	PARKS, GOLF COURSES

40

LAND USE POLICY

north area study

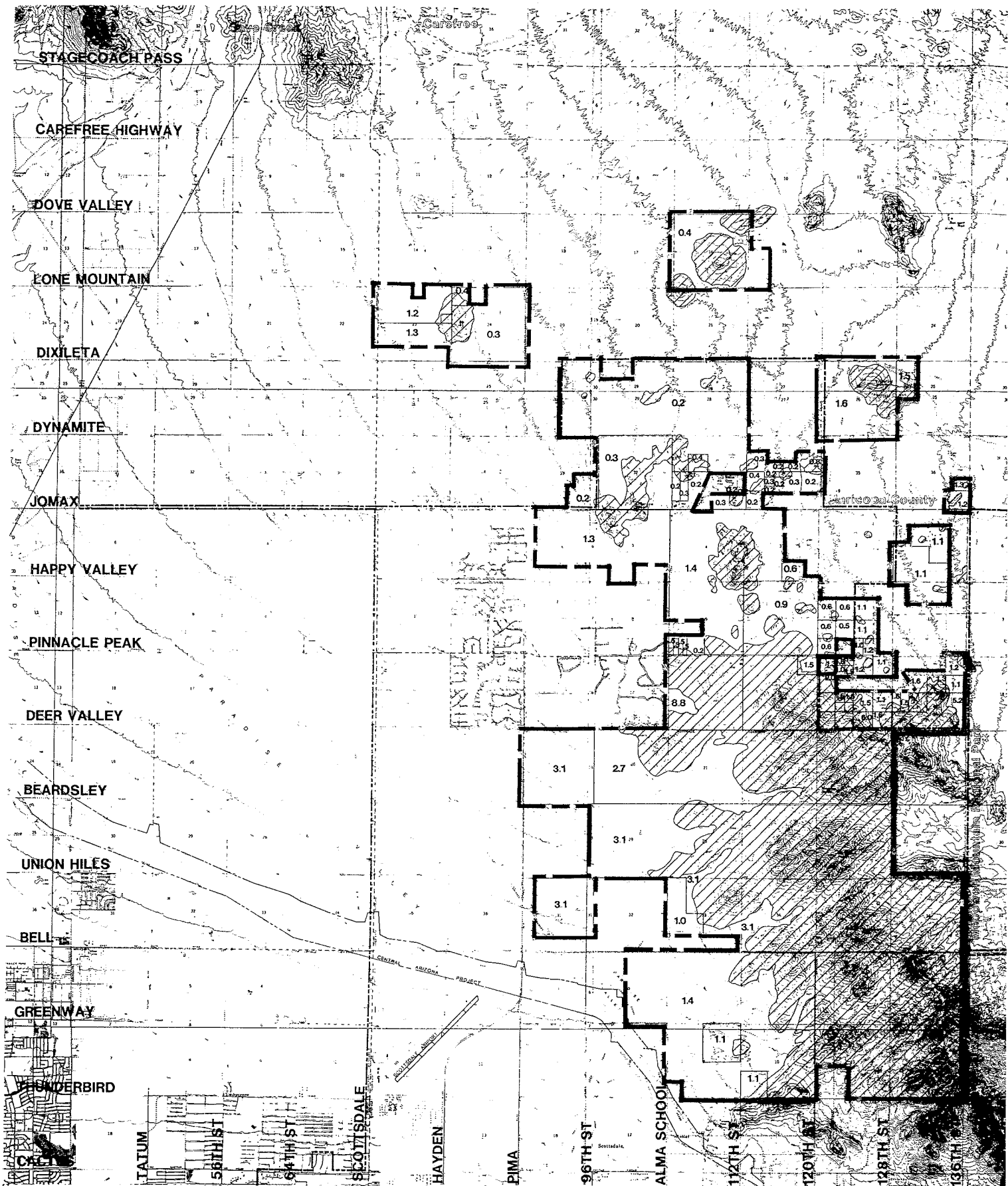
## LAND USE POLICY



Until recently, most of the North Area was under the jurisdiction of Maricopa County. In 1979, Maricopa County adopted the Desert Foothills Policy and Development Guide which set general guidelines for the development of the area. The Foothills Plan recognized the unique natural environment; however, the plan generally reflected the existing suburban zoning except for planned rural areas in the northeast corner of the study area.

A portion of the North Area, south of Deer Valley, has been in the City of Scottsdale for two decades. This area is unplanned and vacant due to the city's adoption of a ten year growth phase line. The phase line policy discouraged development in Scottsdale north of the CAP. This policy will be reevaluated with the North Area Plan. Phoenix has a similar policy on development north of the CAP which extends to the year 2000.

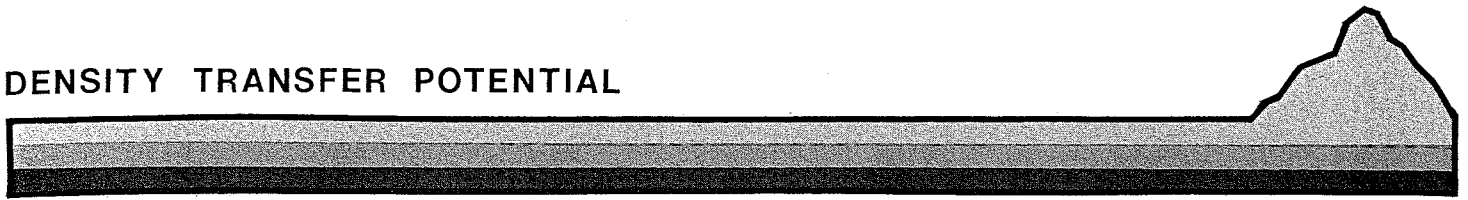
The Pinnacle Peak Interim Plan provides development guidance for active development areas annexed to the city in 1982. This plan recognizes the planned communities near Pinnacle Peak which were approved by Maricopa County prior to their annexation to the City of Scottsdale.



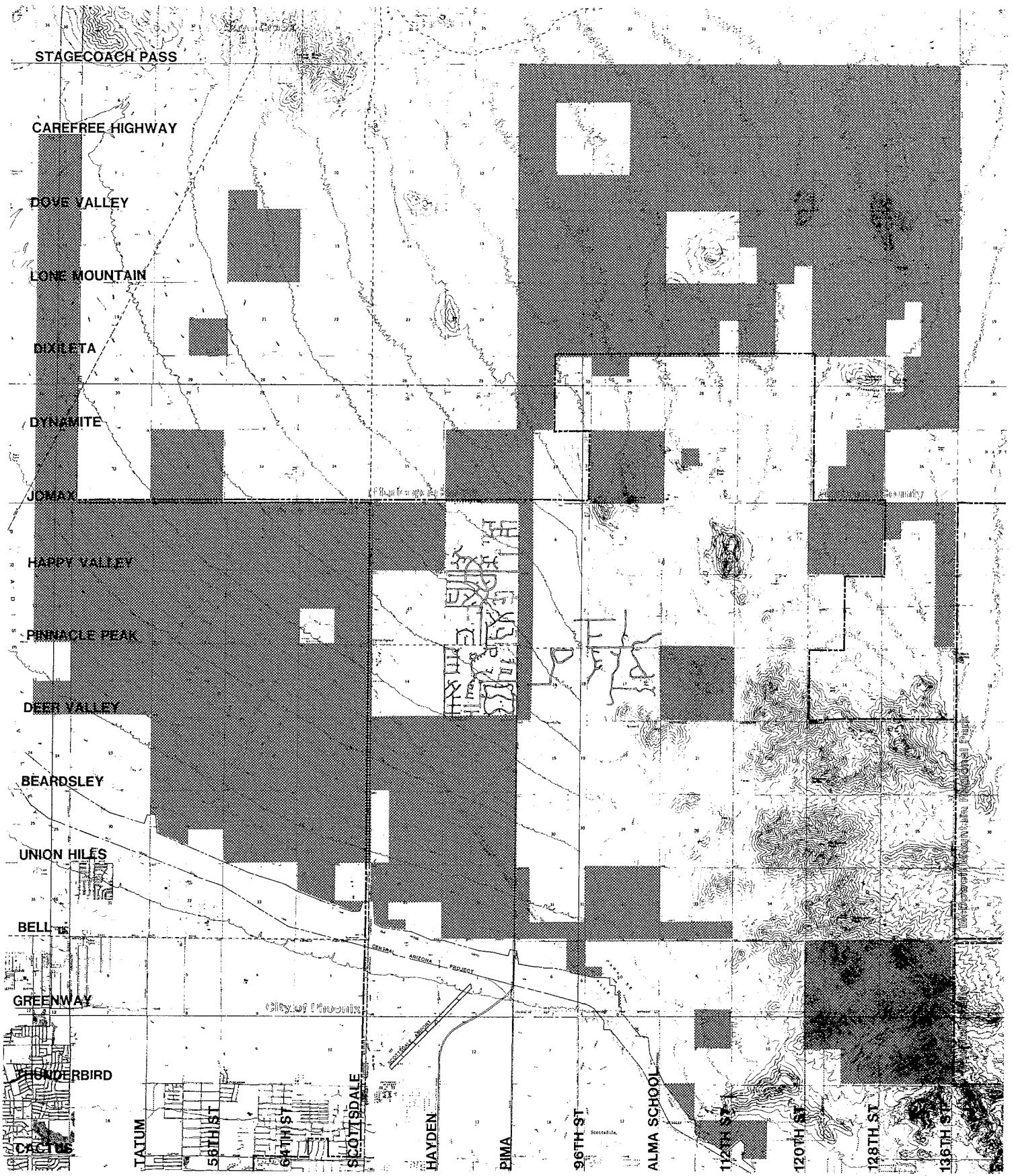
**DENSITY TRANSFER POTENTIAL**  
 SCOTTSDALE HILLSIDE ORDINANCE YIELDS  
 BASED ON NOVEMBER 1982 CITY AND COUNTY ZONING



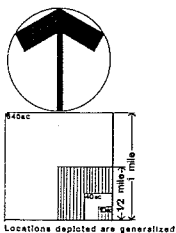
## DENSITY TRANSFER POTENTIAL



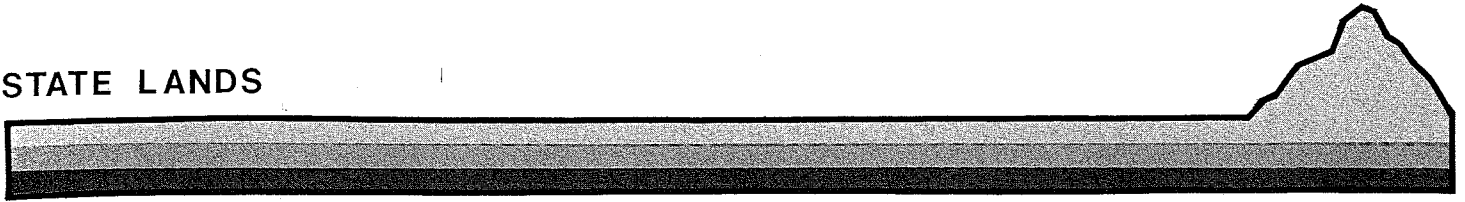
The City of Scottsdale has adopted a hillside conservation ordinance which encourages the transfer of development rights from steep slopes to less restrictive locations in flatter areas. Most of the steep slopes covered under the ordinance are in the McDowell Mountains. A similar density transfer procedure may be required to protect the major washes. Overall, the city encourages transferring development rights from environmentally sensitive areas to land more suitable for development.



STATE LANDS



## STATE LANDS



In 1981 the Arizona state legislature passed the State Urban Lands Management Act. This act has special significance for the North Scottsdale area. The state is the single largest landowner in the North Area with large landholdings concentrated near the Outer Loop and in environmentally sensitive areas to the far north. The State Land Department has a legislative mandate to develop its land in a manner that benefits the state education trust, considers the policies of local governments, maintains a balance of water supplies and demand, and prevents urban sprawl. The State Urban Lands Act opens avenues for the protection of environmentally sensitive areas to the far north, economic development near the Outer Loop, management of water resources, and phased development that minimizes the problems of urban sprawl while allowing for community growth.



# Developing The North Area



- A. PHYSICAL DETERMINANTS - In order to preserve the natural desert and protect the public, several studies were conducted which show the natural limitations to development. Detailed investigations were made concerning unstable and steep slopes, soil types, waste disposal limitations, and flood hazards. Development in sensitive areas should be minimized; and where it does occur, extraordinary on-site engineering will be required to protect the natural environment.
- B. INFRASTRUCTURE - Existing and planned infrastructure will shape future development. If city services and transportation are to be managed in a cost-effective and efficient manner, city growth must be guided. The land use plan for the North Area must take into account the existing and planned water, wastewater, and street systems.
- C. PUBLIC POLICY - The plan for the North Area should reflect past development policies and commitments as well as future expectations. A careful balance between the public and private interest must be maintained if the city's adopted Land Use Planning Guidelines are to be followed.

The Scottsdale planning process requires that a firm foundation be established for the North Area. The background information is important because it shapes the basic planning principles and assumptions for the area. An analysis of the basic assumptions includes a review of the major inputs into the plan:

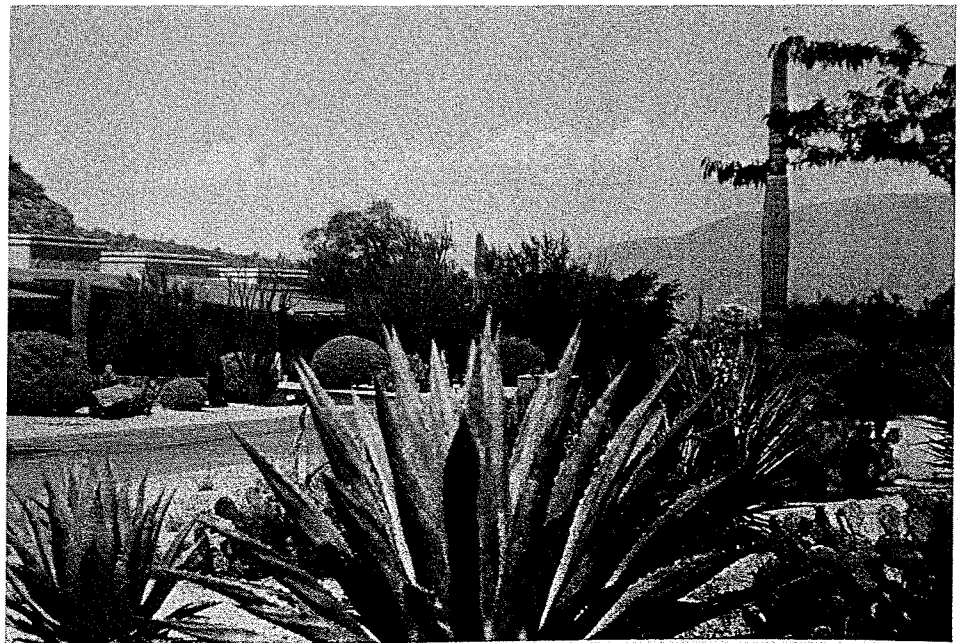
The next step in the North Area planning process is to develop alternatives. After receiving public input, the amended alternatives will be considered by the Planning Commission. Finally, the Planning Commission will recommend a plan to the City Council who has the final authority over the process.

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•BOULDERS AND RUGGED  
TERRAIN SET THE  
CHARACTER OF THE FAR  
NORTH AREA



•NATIVE VEGETATION  
PROVIDES AN ATTRACTIVE,  
WATER CONSERVING THEME  
FOR DEVELOPMENT